BRITISH HONDURAS

ANNUAL REPORT

OF THE

DEPARTMENT OF AGRICULTURE

FOR THE YEAR

1963

Printing Department—Belize City.

CONTENTS

PART I

Policy	Paragraph 1 - 3
Weather conditions	4
CROPS	
Citrus	5 - 8
Sugarcane	9 - 15
Coconuts	16 - 19
Cacao	20
Bananas	21
Rice	22 - 24
Maize	25 - 26
R.K. Beans	27
LIVESTOCK	
Cattle	28 - 29
Pigs	30 - 31
Poultry	32
Beekeeping	33 - 35
Marketing Board	36
Agricultural Credits	37 - 40
Resettlement Schemes	41 - 42

PART II

WORK OF THE DEPARTMENT

Staff	43 - 49
Overseas Training Courses	50 - 53
DISTRICT AGRICULTURAL STATIONS	
Orange Walk	54 - 57
Stann Creek	58 - 60
Toledo	61 - 64
Cayo	65
Belize	66 - 69
Central Farm	70 - 79

Agricultural Show 80

Sale of Plants and Seed 81 - 82

Work by Mechanical Units 83 - 85

Veterinary Services 86 - 87

Pest and Diseases of Plants 88 - 92

Research - Central Farm 93

Sugarcane Research 94

Visitors

APPENDICES

I. LIVESTOCK TREATMENTS

II. SLAUGHTER HOUSE RETURNS

III. METEOROLOGICAL DATA

IV. SUMMARY OF RAINFALL

V. AGRICULTURAL EXPORTS 1963

*_*_*_*_*_*_*_*_*_**_*

ANNUAL REPORT OF THE DEPARTMENT OF AGRICULTURE

FOR THE YEAR 1963

PART I

POLICY

The policy of the Agricultural Department remained unchanged pending a full study of the Development Plan recommended by the United Nations Economic Commission.

2. The basic aims remained as follows:-

(i) Increased production of food crops such as maize, beans, rice and livestock aimed at self-sufficiency.

(ii) Increased production of export crops such as sugar, citrus and bananas.

3. The policy directed to their attainment was as follows:-

(i) The preservation of land and its natural resources by proper land utilization.

(ii) Proving the land potential by scatter plot trials.

(iii) Carrying on research into crops of greatest economic benefit to farmers in the country.

(iv) Dissemination of information thus obtained through the media of Radio Broadcasts, circulars and field demonstrations by Extension Staff.

(v) Assisting farmers to develop their lands by (a) clearing operations using Caterpillar D7 tractors (b) by making available Departmental tractors and implements at nominal rates for cultivation, cambering, draining, fertilising and seeding.

(vi) Supplying good planting material from Departmental nurseries, such as seedlings of citrus, coconuts, tropical fruit trees and ornamentals as well as tested and certified vegetable seeds.

(vii) Making loans available to farmers through the Agricultural Credits Fund and Small Farmers' Loan Fund; and

(viii) Making lands available to farmers by instalment payment under the Location Ticket System.

WEATHER CONDITIONS

4. The rainfall recorded at most stations was again below the 10 year average. One exception was Central Farm where rainfall of 64.59 inches exceeded the 10 year average of 61.90 inches.

Dry weather conditions were experienced in most areas from January to May, followed by increasing rainfall intensity reaching a peak during October and thereafter gradually declining. Some rather cold spells were experienced in all parts of the country on the eve of Christmas Day and New Year's Day. Rainfall records are to be found in Appendix IV.

CROPS

Citrus

5. The acreage under citrus at the end of 1963 was estimated at 6,586 acres being approximately 5,000 acres of oranges and 1,586 acres of grapefruit.

6. Citrus cultivations affected by Hurricane 'Hattie' made rapid recovery and most groves were back in normal production for the 1962/63 crop. During this season the undermentioned quantities of fruit were delivered to the factories:-

Grapefruit	231,000 contract boxes	80 lbs each
Oranges	758,000 "	" 90 lbs. each

The corresponding production figures for the 1960/61 season prior to 'Hattie' were:

Grapefruit	260,945 boxes
Oranges	717,680 boxes

7. The British Honduras Fruit Company made an initial payment of $1.80 per ninety- pound box for oranges and a subsequent bonus payment of $1.08 resulted in th eventual price of $2.88 per box. The Citrus Company of British Honduras which normally paid .90¢ per box increased their rate to $2.00 per box with effect from 17th October, 1963.

8. The 1962/63 season Citrus Exports are shown in Table I.

T A B L E I

(a) Citrus Company of B.H.

Grapefruit	Net Weight (lbs.)
Sections	4,735,309
Juice	842,163
Concentrate	61,475
Oranges	
Juice	6,727,222
Concentrate 6/1	1,458,300
Concentrate 60 brix	1,137,887
Juice 65/66 brix conc.	373,120
Fresh Oranges	1,942,875
Sweet Orange Oil	101,816

These exports were mainly to the United Kingdom and Canada.

(b) The B.H. Fruit Company

The B.H. Fruit Company (Salada) began operations in the Stann Cre District on 4thApril, 1963. Production returns for the period 4th April - 31st December were as follows:-

Product	Unit	Total Quantity Manufactured
Grapefruit		
Concentrated Juice		36,082 gallons
Orange		
Concentrated Juice		
65° brix	5 gal. pail	160,038 gals.
	55 gal. drum	3,300 gals.
42° brix	5 gal. pail	8,064 gals.

Exports during the abovementioned period were as follows:-

Grapefruit concentrate	36,082 gals.
Orange concentrate	223,111 gals.

SUGARCANE

9. The grinding season commenced on January 21st and lasted until July 24th. During this period 210,362 tons of cane were harvested; 3,128 tons less than in 962, and sugar made amounted to 25,840 tons. This was 2,023 tons more than that for 962 due to the increased sugar content of the cane harvested.

10. Relevant Factory data is shown in Table II.

TABLE II

Tons cane ground	210,362
Tons sugar made	27,840
Average grinding rate tons cane/hour	66.39
Tons cane per ton 96° sugar	7.46
Tons cane per ton sugar (commercial)	7.56
Average juice purity, crusher	88.29
Average juice brix, crusher	22.04
Average juice Pol, crusher	19.46
Tons burnt cane delivered	94,496.00
% Total crop delivered as burnt cane	44.9
Gallons molasses made	843,133

11. The extremely dry weather toward the end of 1962 caused a reduction in the quantity of cane available for harvesting in 1963. However, this drought, which continued into early 1963, did have a beneficial effect as it resulted in an increase sugar content in the cane. This year's sugar proudction was the highest ever recorded.

12. Several important experiments with cane including fertiliser, varieties and density of planting trials were carried out during the year. The more important of these trials are reported on page 23 et seq. under the heading 'Research'.

13. A seedcane production scheme aimed at the establishment of 250 acres of high yielding and proven varieties of cane by mid 1965 was initiated in early 1963. By the end of July, twenty acres of six Barbados cane varieties had been planted.

14. At the end of 1962 it had been agreed that the May price Arbitration Committee's formula would be used in 1963 to determine the price of sugarcane. This was done and the final price paid per ton was $13.66, an increase of $2.54 per ton over the 1962 crop price.

15. Two small cane mills operated in the Toledo District and 4,270 proof gallons of rum were made.

COCONUTS

16. Mr. T.T. Ramos, Sr. Farm Demonstrator, continued to act as Secretary to the Coconut Industry Board during the year.

17. No election of board members was held and there was no registration of growers. No applications for licences to export coconuts were received, and no guaranteed prices were fixed.

18. Following representations made by the Coconut Industry Board to Government as far back as 1961, Government was at the end of 1963 considering the repealing of the Coconut Industry (Control) Ordinance (No. 6 of 1958) the Coconut Insurance Ordinance (No. 5 of 1958) and the Coconut Industry (Control) Regulations, (No. 4 of 1959)

19. Imports of nuts to the Belize and Stann Creek Districts amounted to 197,084 These were mainly from the Republic of Honduras. The maximum retail price remained fixed at .09¢ per nut. Exportation of whole nuts to the United States was resumed in November and 172,200 nuts were exported by the end of the year. These were valued at $12,055.

CACAO

20. The Hummingbird Development Company Ltd. maintained existing fields but ther was no expansion in acreage. This Company processed an exported 126,857 lbs of dried and fermented beans valued at $25,439 during 1963.

Small Farmers' interest in this crop has dwindled considerably and many of the groves have been abandoned.

BANANAS

21. Messrs Greene & Atkins, banana growers of Alabama Farm, Waha Leaf are the onl commercial producers of the fruit. 46,533 forty-pound boxes were shipped to the United States of America. During the latter part of the year their cultivation was increased to 1,300 acres all of the Panama Disease resistant variety "Golden Beauty".

As the year drew to a close the United Fruit Company was investigating lands in the Monkey River area for large scale cultivation of the crop.

RICE

22. The acreage of rice in 1963 exceeded that planted in 1962 by 385 acres. Acreage planted to rice in the various districts were:

Corozal	42
Stann Creek	146
Cayo	152
Belize	610
Orange Walk	612
Toledo	1,569
	3,131 acres

23. Although insufficient rains in May and June hampered early growth in the fields, the 1963 crop eventually proved to be a bumper one in most areas.

24. The Department of Agriculture through the Ministry of Natural Resources introduced from El Salvador seed of the Hoja Blanca resistant variety 'Dima 2'. This variety is proving to be popular with farmers especially in the Belize, Cayo an Stann Creek Districts.

MAIZE

25. There was also an increase in the acreage planted to corn in 1963. Weathe conditions favoured good growth and the purchases of this commodity by the Marketing Board amounted to 227,981 lbs nearly double the 1962 figure.

26. There was much variation in the average yield from District to District ranging from 800 lbs of shelled corn per acre in the Cayo District to 1,200 lbs in Orange Walk District. Acreage planted to maize in the various Districts were:-

	1963	1962
Corozal	1,208	
Toledo	2,653	2,542
Stann Creek	266	135
Cayo	2,028	1,615
Belize	605	661
Orange Walk	6,631	5,631
Total	13,331 acres	10,584 acres

K. BEANS

. Acreage for the 1963/64 crop showed marked increase over the corresponding gure for the 1962/63 crop. Comparison figures are as follows:-

1962/63 acreage planted	- 1,587	Marketing Board Purchases	- 747,088 lbs.
1963/64 " "	- 1,810	" " "	- 482,627 "

elds of late plantings were adversely affected by the drought which lasted for everal months. The Marketing Board issued 77,290 lbs. of bean seed, approximately wo-thirds of which was on loan and one-third as cash sales. Yields varied from 00 to 1,000 lbs. to the acre.

IVESTOCK

attle

3. The cattle population of the country at the end of 1963 was estimated at 5,000 head, an increase of 2,800 head over the June-July, 1961 Census figures. xtension work continued for the upgrading of cattle herds and the establishment of mproved pastures.

9. There were no further developments regarding the erection of an abattoir.

IG REARING

0. The Department imported fifteen pregnant unrelated pedigree Duroc Jersey ows and two boars. The breeding programme is being carried out at Central Farm under he supervision of the Livestock Officer.

1. The scheme aims at producing for distribution to farmers young gilts and oars from this nucleus herd. There is a great demand for a better breed of pigs. owever, it is realised that the introduction of improved stock must be accompanied y improvements in feeding and management. Research along these lines is being arried out at Central Farm.

POULTRY

2. Farmers in the mennonite communities of Blue Creek, Shipyard and Spanish ookout continued to be the main suppliers of local poultry and eggs. The industry ontinued to be hampered by the importation of frozen chicken and the lack of suitable eeds at reasonable prices. A total of 18,806 day old chickens were imported at a alue of $8,154. Imports of frozen poultry meat amounted to 814,600 lbs valued at $294,942. Retail price of frozen chickens ranged from 55¢ - 60¢ per pound. Slaughter ouse returns for the country during 1963 appear in Appendix II.

BEEKEEPING

3. The beekeeping industry continues to make progress and there were sub- stantial increases in the number of beekeepers, apiaries, hives and honey production during the year. A synopsis of the position of the beekeeping industry is given below.

TABLE III

DISTRICT	NO. OF BEEKEEPERS	APIARIES	HIVES	HONEY PRODUCTION 1963	HONEY PRODUCTION 1962
Corozal	36	72	2,072	125,704	59,403
Orange Walk	24	48	1,593	105,300	55,265
Belize	2	2	10	-	No record
Cayo	4	4	25	702	" "
Stann Creek	7	10	101	528	540
TOTAL	73	136	3,801	232,234	115,208 lbs.

35. Mr. Antonio Espat and the Northern Beekeepers Cooperative exported a total of 181,359 lbs of honey (90.6 short tons) Honey was also sold locally at $2.50 per gallon.

MARKETING BOARD

36. The Marketing Board purchased maize, paddy and red kidney beans from farmers at guaranteed prices. The purchase price for the latter crop was reduced from $15.75 to $13.70 per 100 lbs during the year.

Purchase of the above-mentioned commodities were as follows:

Maize 227,981 lbs
Paddy 2,718,006 lbs
R.K. Beans 482,627 " (1963/64 crop)

A considerable quantity of R.K. Beans was sold to merchants and other vendors. No figures of the latter transactions are available.

AGRICULTURAL CREDITS

37. Twenty-five loans were approved by the Agricultural Credits Fund Committee in 1963. Of these, 9 were actually issued amounting to $12,108.00. These loans, plus instalments issued on old loans made up a total of $17,275.92¢

The distribution of new loans in 1962/63 is as set out below:-

PROJECT	1962	1963
Citrus	1	2
Fertiliser and pesticides	1	-
Farm equipment	1	2
Mixed Farming	3	-
Livestock and Pastures	5	5
Homes and farm buildings	1	-
Transport	3	-
Beekeeping	1	-
	16	9

38. The amounts out on loan as at 31st December for the past two years were as follows:-

31st December 1962 $291,634.34
31st December 1963 275,599.78

Financial position of the fund at 31.12.63

Capital		$400,000.00
Loans issued	$626,511.96	
Loans committed	65,189.60	
	691,701.56	
Less repayments	350,912.28	
	340,789.28	340,789.28

Balance available $59,211.72

39. Early in 1963, Government set up a "Small Farmers' Loan Fund" of $102,000.00 to provide financial and other assistance to farmers and farmers groups who did not otherqualify for loans from the Agricultural Credits Fund.

The following were some of the conditions for the granting of loans under this scheme.

(i) Loans were to be made in kind. However, in special cases, cash advances not exceeding $50.00 were to be made.

(ii) No individual would be granted a loan exceeding a value of $250.00

(iii) Loans were to be repaid over a period not exceeding 18 months.

40. As at 31st December, 1963, 515 loans totalling $45,764.17 had been issued.

RESETTLEMENT SCHEMES

41. A hundred families in Silk Grass and thirty in Georgetown continued to work their lands during the year. Details of acreages cultivated to the various crops from the two areas are as given below:-

Village	Rice	Corn	Beans	Cassava	Plantains & Bananas
Georgetown		6	4.5	4.5	15
Silk Grass	99	48.5	-	20.5	-

42. The Silk Grass farmers sold 100,818 lbs of paddy and 2,193 lbs of corn to the Marketing Board. Relief assistance was discontinued in April, 1963 and Small Farmers loans were then made available to some farmers in these areas.

PART II

WORK OF THE DEPARTMENT

STAFF

43. Mr. Eric W. King, BSc (Hons,) formerly Agricultural Officer, Uganda was appointed Chief Agricultural Officer and assumed duties on December 18th, 1963.

44. Mr. Maurice K. Chopin, B.A., M.B.E., Principal Agricultural Officer continued to act as Chief Agricultural Officer except for the period May 26th to November 13th, while on vacation leave in the United Kingdom.

45. Mr. A.V. Campbell, Administrative Officer, Grade II joined the staff as Administrative Secretary in November, 1962 and served in this capacity throughout the year.

46. Mr. D.P.H. Tucker, BSc, Dip. Agric. Science was on vacation leave from 8th May to 20th October, 1963. He resigned his job as Agronomist on the termination of his contract in order to pursue further studies at the University of California.

47. Mr. G.C. Ellis, B.S.A., Agricultural Officer, resigned on 15th September to work for Hercules Powder Company Ltd.

48. Mr. O.O. Orie formerly Farm Manager, Never Delay Estate, was appointed Livestock Officer. He assumed duty on February 16th, 1963.

49. Messrs C.D. Atkins, J.A. Swasey, T.L. Brackett and W.A. Grant were promoted to Asst. Agricultural Officers.

OVERSEAS TRAINING COURSES

50. Farm Demonstrator Grade I, Mr. H.A. Reyes, returned from Trinidad having successfully completed a course at the Eastern Caribbean Farm Institute. He was awarded the E.C.F.I. Credit Diploma.

51. Farm Demonstrator Grade I, Mr. P.R. Lizarraga Jr. continued his Diploma course at the Eastern Caribbean Farm Institute. He is expected to return in July, 1964.

52. Mr. Norris Wade, Asst. Analyst was awarded a scholarship by the Agency for International Development (A.I.D.) tenable at the University of Arizona. He left in May to begin a four year course leading to the BSc. degree in Agriculture.

53. Mr. R.R. Locke, Asst. Analyst was awarded a scholarship to study for a degree under the Canadian Commonwealth Assistance Programme. He entered MacDonald College of McGill University, Quebec, Canada in September.

DISTRICT AGRICULTURAL STATIONS

54. Orange Walk

General maintenance work was carried out and a small plant propagation nursery was maintained.

Limited hire tractor services were available for brush cutting, ploughing, harrowing and haulage.

55. The programme of work for the year followed closely the pattern of previous years. Field days for farmers were held in Shipyard, Yo Creek and Trinidad villages. Personnel of the Caribbean Tobacco Co. also gave demonstrations on the various cultural operations in tobacco growing as well as on the curing process.

56. In an effort to stimulate farmers interest in the establishment of better pastures, free jaragua grass was distributed to ten farmers, who after burning their milpas, sowed the seeds given them. Eight recorded success and these have since fenced off their grass holdings which they will use as a source of material for expansion.

57. Work continued satisfactorily on the establishment of the new Yo Creek Agricultural Station. This scheme, which was to be financed from C.D.& W. funds, was approved in April, 1963 and work on the project began the following month.

Stann Creek A-stat

58. The Agricultural Station at 10 miles Stann Creek Valley continued to be the major source of plants and planting material for sale to farmers.

59. Citrus, mangoes, coconuts, other tropical fruit trees, and ornamentals were among the many plants propagated. A five-acre block of cacao nursery and two one-acre observation plots were maintained.

Three quarters of an acre was planted in Carib Yam. A yield of 8,000 lbs. was obtained, most of which was sold as seed to farmers.

LIVESTOCK

60. Cattle - Seven bull calves were born into the herd during the year. The Red Poll bull was replaced by a Brahmin bull 'Premium Duckie' from the Central Farm breeding station.

Six cows from Central Farm were also added to the herd which on 31st December, 1963 was comprised of 1 Brahmin Bull, 13 cows, 9 bull calves and 6 heifer calves.

AGRICULTURAL STATION, TOLEDO

61. Routine maintenance work was carried out at the Agricultural Station. In addition 1.5 acres were planted to rice, producing 2,820 lbs of paddy.

62. Three acres of pasture were established with jaragua grass and 2.5 acres were planted to citrus, mango, corn and vegetables. A small citrus nursery was also maintained.

63. The San Antonio Demonstration Plot was also maintained. At the end of the year the Department's cattle herd totalled 45 head comprising 1 Brahmin Bull, 1 Red Poll Bull, 22 cows, 9 bull calves and 12 heifer calves. Two pure bred Brahmin Bulls and 2 cows, also 4 cows of mixed breed were sent from Central Farm to improve the station's stock.

64. A scheme which included plans to post a Farm Demonstrator at the San Antonio Plot was approved. It was planned that the Farm Demonstrator would undertake poultry and pig rearing projects along improved lines which it is expected would have demonstration value for the farmers of the surrounding areas. However, implementation of the plan was deferred to 1964.

CAYO

65. The sub-station in San Ignacio, Cayo District was rehabilitated during the year.

Nurseries of citrus and dwarf coconuts were established in San Ignacio and Benque Viejo del Carmen. Three hundred and seventy budded citrus plants and 84 dwarf coconut seedlings were sold to farmers. 198 of the latter were distributed free under the Hurricane Rehabilitation Scheme.

Farm Demonstrator, Mr. H.A. Reyes, Dip. Agric. (E.C.F.I.) took charge of the station on his return from Trinidad.

BELIZE DISTRICT

66. Early planted fields of rice and corn suffered from scorching. With the onset of the rains, however, the crops were back to normal. During the rainy season flash floods did some damage to food crops especially in the Sibun River area.

67. Meeting and Tours - A regional meeting to finalise preparation of the Development programme was held at Burrell Boom on the 29th August. The meeting was attended by Village Council Chairmen and representatives of various Government departments.

A farmers field day was held in the Lucky Strike area on October 23rd. It was attended by His Excellency the Governor, the Minister of Natural Resources, Officers of Government Departments and some one hundred and thirty farmers. Practical demonstrations given included the propagation of citrus and mangoes, the castration of pigs and cattle, and pasture management. The field day was a great success.

68. Hurricane Rehabilitation - Three nurseries of coconut, citrus and mango seedlings were established as part of the Hurricane Rehabilitation programme. Coconut plants were distributed free to all farmers who suffered crop losses in the Hurricane. Mango and citrus plants will not be available for distribution before 1964. The following were distributed free to farmers:

Rice seed	24,825 lbs.
Grass seed	427 "
Corn seed	2,597 "
Coconut plants	1,504 seedlings
Barbed wire	733 rolls.

RICE

Tennessee Agric. Ltd. cultivated a small acreage of rice during the year. Late prepatation of land and inclement weather prevented further expansion. The Rancho Dolores Progressive Group increased their acreage from 18 - 27 this year. The crop was a good one. They are now anticipating large scale increase in 1964 aided by mechanical cultivation. Two local Rice Mills, one at Boom and the other at Crooked Tree operated during the season. The Crooked Tree Mill milled 72,089 lbs of paddy. There was no incidence of "Hoja Blanca" disease this year. The list given below records purchases by the Marketing Board from various villages in respect of 1963 crop.

Belize Rural Paddy Purchases - 1963 Crop

Village	Quantity lbs.
Crooked Tree	9,185
Black Creek	345
Willows Bank	38,162
St. Paul's Bank	8,359
May Pen	11,835
Lemonal	8,616
Bermudian Landing	52,960
Rockstone Pond	5,441
Spanish Creek	9,814
Grace Bank	19,637
Sibun River	1,671
Lucky Strike	98
Sand Hill	68
Flowers Bank	46,765
Burrell Boom	8,326
Double Head Cabbage	52,307
Mussell Creek	22,146
Cockloft	4,773
Rancho Dolores	62,826
Davis Bank	4,362
Butter Cup	569
Isabella Bank	3,274
Gales Point Manatee	2,594
Maskall	533
Big Fall	14,074
Lime Walk	382
Scotland	262
TOTAL	389,384

VEGETABLES

Vegetable growers in the Sibun River were affected through price control of cabbage and a glutted market. Importation of cabbage from nearby Republics resulted in competition. Growers were anticipating to stop growing this commodity if better prices are not offered. The wholesale price was as low as 7¢ per lb on occasions.

69. Central Farm - Cattle

Mr. O. Orio was appointed Livestock Officer and assumed duty on February 16th, 1963. He reorganised the cattle, pig and sheep rearing projects and succeeded in expanding the scope of the breeding programme.

70. The upgrading of cattle herds, research into the feeding and management of cattle, and the establishment of better pastures were the main features of the Department's work in cattle during the year.

71. The herds at Central Farm continued to show improvement during the year. The calf crop for 1963 totalled 131 head comprising 67 bull calves and 51 heifer calves. The following tables are a synopsis of the position in each of the herds now being reared.

72. FOUNDATION HERD NO. 1 - JAMAICA RED

T A B L E IV

	BULLS	COWS	1961 Male	1961 Female	1962 Male	1962 Female	1963 Male	1963 Female	TOTAL
Stock on 31.12.62	9	52	11	12	20	8	-	-	112
Births							24	22	46
Deaths							-1	-1	-2
Sales	-8					-1			-9
Transfers		-2			-10		-16	-21	-49
Reclassification	21		-11	-4	-10	4			Nil
Stock on 31.12.63	22	50	Nil	8	-	11	7	-	98

73. BRAHMIN HERD

T A B L E V

	BULLS	COWS	YOUNG BULLS	HEIFERS	CALVES MALES	CALVES FEMALES	TOTAL
Stock on 31.12.62	9	28	-	-	5	11	53
Births	-	-	-	-	9	15	24
Transfers	-	-2	-	-	-2	-	-4
Sales	-2	-	-	-	-1	-	-3
Deaths	-	-	-	-	-	-1	-1
Stock on 31.12.63	7	26	-	-	11	25	69
Reclassification			6	22	-6	-22	-
Stock at 31.12.63	7	26	6	22	5	3	69

74. Local Herd

T A B LE VI

	BULLS	COWS	1961 M	1961 F	1962 M	1962 F	1963 M	1963 F	TOTALS
STOCK on 31.12.62	1	86	16	25	30	29	-	-	187
Births							34	27	61
Deaths		-1					-4	-2	-7
Sales		-42	-1				-5	-3	-51
Transfer to weaners			-15		-30		-4	-6	-55
Transfer from Red Poll Herd		2						21	23
Reclassification		46		12		-29		-29	Nil
STOCK on 31.12.63	1	91	Nil	37	Nil	Nil	21	8	158

75. Early in the year a decision was taken to abandon the rearing of the Large Black breed of pigs as these had ceased to prove satisfactory. Accordingly the Department imported ten sows, five gilts and two boars of the Duroc Jersey breed from the Gatrell Duroc Farm in Marion County, Florida, U.S.A.

The gilts and sows arrived already bred and it was the aim of the Department to make young gilts and boars of this breed available to progressive farmers in various parts of the country. The breed has proven to be popular and the demand far exceeds the supply. Research on feeding and management is being carried on.

76. PIGS - 1963

DUROC JERSEYS

T A B L E VII

	BOARS	SOWS	PIGLETS MALES	PIGLETS FEMALES	TOTAL
Purchases from U.S.A.	2	15			17
Births			37	29	66
Deaths			-2	-3	-5
Sales		-1	-18	-8	-27
Stock on 31.12.63	2	14	17	18	51

77. LARGE BLACKS

TABLE VIII

DATE	OLD BOARS	BOARS	OLD SOWS	GILTS	PIGLETS M	PIGLETS F	TOTAL
Stock on 31.12.62	1	1	3	1	12	14	32
Births					4	4	8
Deaths			-1		-8	-11	-20
Sales	- 1	-1	- 2	-1	-8	-7	-20
Stock on 31.12.63	Nil	Nil	Nil	Nil	Nil	Nil	Nil

78. Sheep Flock

A flock from a Suffolk X Barbados Black Belly cross is being slowly built up. Stock on hand as at 31st December, 1963, were as follows:-

Rams -	2
Ewes	26
Wethers	3
Lambs	24
	55

79. Sales of Livestock and Livestock Products

Cattle	$13,775.20
Pigs	462.27
Sheep	93.25
Milk and Milk products	1,364.90
TOTAL	$15,695.62

80. Agricultural Show

An Agricultural Show planned for the latter part of the year was successfully held in San Ignacio on the 30th November. The show, which featured mainly livestock of various types drew exhibits from Central Farm, the farms of Messrs Nord and Norris and from several other livestock owners in the district. This was the second Agricultural Show held in the district within recent years.

81. Sale of Plants and Vegetable Seeds

The following table records data of vegetable seeds and plants sold from various Agricultural Station nurseries.

82. TABLE IX
VEGETABLE SEEDS AND PLANTS SOLD

Station	Veg. Seed Packets	Citrus Seedlings	Cacao Seedlings	Tropical Fruit trees	Grafted Mangoes	Coconuts Tall	Coconuts Dwarf	Ornamentals
Corozal	402	-	-	-	-	-	-	-
Orange Walk	4,503	427	-	311	-	1,645	25	42
Belize City	1,812	-	-	-	-	-	-	-
Central Farm	-	689	-	40	-	-	187	3,006
San Ignacio	559	370	-	-	-	-	84	-
Stann Creek	204	8,401	3,081	560	323	-	-	580
Toledo	611	244	-	-	-	236	15	-
TOTAL	8,901	10,151	3,081	911	323	1,881	311	3,628

83. Work done by Departmental Mechanical Units for Farmers

TYPE OF OPERATION	TOLEDO	STANN CREEK	BELIZE	CAYO	ORANGE WALK
Ploughing (acres)	94	-	93	62	20 acres
Harrowing "	88	-	79	64	23 "
Bush-hogging "	24	-	44	72	24 "
Hauling(hours)	212	97	-	-	78 hours

84. Stann Creek District

Operations by 35 and 65 Massey Ferguson tractors were as follows:

Operation	Tractor Meter Hours
Bush-hogging	943.8
Harrowing	657.8
Ploughing	279.2
Cambering	39.3
Hauling trailers	97.4
Making drains	1.6
Ridging	8.6
Terracing	53.6
Total Meter Hours	2,459.3
Totalacres	1,018.6

5. Land Clearing Unit

Four caterpillar D7 and three D4 tractors operated in the Stann Creek istrict duringthe year. Despite frequent breakdowns resulting from the machines being ld the unit did the following:-

Operation	Tractor Hours worked
Clearing	4,843
Harrowing	466
Cutting hills, digging dams etc.	393
Grading roads	31
Windrowing	379
Total Hours	6,112

3. Veterinary Section

Mr. F.F. Orio Sr. carried out the duties of Veterinary Officer during the ear. In the month of September following a report of suspected Swine Fever in the illage of Chan Pine Ridge, Orange Walk District, almost the entire swine population of ne village was examined and Dr. Arturo Godoy of the American Cyamid Company confirmed ne existence of the disease. The entire district was declared an infected area and xtension staff made up of five teams inoculated 5,855 head of swine during the period 1st September to 19th October.

In the Crique Sarco - Oxtosha area of Toledo District blood-sucking bats aused much damage to livestock especially to cattle and pigs. A good number of the atter died from some obscure disease transmitted, it is thought by these bats.

7. A list of treatments for various livestock ailments carried out by the eterinary Staff is given in Appendix I.

8. Pest and Diseases of Plants

"Wee wee" ants and "drunken baymen"bees continued to be the major pests to rops throughout the country. The former attacks the majority of crops while the latter eem to favour the young succulent shoots of citrus, mango and other tree crops.

9. Ground Moles continued to be a problem to many farmers in the Cayo District. ther pests were army worms, cutworms and aphids.

0. In the Toledo District "wee wee"ants and "drunken baymen"bees did some damage o corn and ground provision crops in the fields.

1. The gru gru beetles were found to be common in the Stann Creek District. It s a major cause of discouragement to coconut growers in these parts. June bugs or triped beetles also destroyed some citrus blosooms in orchards in the Stann Creek District t the beginning of the rainy season.

2. There were no major diseases of plants but fusarium wilt and blight hampered ne efforts of many vegetable growers in the country.

5. Research - Central Farm

In the absence of an Agricultural Chemist or Agronomist no research work in rops of significant importance was carried out during the year. Research was confined o work on livestock improvement and pasture management carried out under the supervision f the Livestock Officer.

94. Sugarcane Research - 1963

The following experimental work was undertaken by the Cane Farming Officer in Corozal District:-

FERTILIZER TRIALS

TRIAL NO. 1

NITROGEN LEVELS

The fertilizer treatments applied 6 weeks after planting or cutting are

N1	100 lb/acre	Sulphate of Ammonia (21%N)
N2	200 "	" " " "
N3	300 "	" " " "
N4	400 "	" " " "

This experiment is on black Louisville clay at San Roman. It was planted in May 1959 and has now been harvested three times. The average yields in tons cane per acre (TC/A) from the six replicates for the plant ratoon crops are given below:

YIELDS IN TONS CANE PER ACRE

Treatment	Plants Harvested Feb. 1961	1st Ratoon February 1962	2nd Ratoon February 1963
N1	50.5	24.9	36.7
N2	49.2	24.9	36.8
N3	52.7	28.7	38.9
N4	51.5	28.3	38.8
LSD (P = 5%)	-	3.2	-

When harvested in 1963 there were no statistically significant differences in yields obtained from the different treatments. The N_3 treatment, 300 lb Sulphate of Ammonia per acre, appears to be the maximum dressing of nitrogenous fertilizer required for best yields.

Trial No. 2

PHOSPATE LEVELS

There are three rates of application of phospates in this experiment, these are

P_1	60 lb/acre	Triple Superphosphate (40% P_2O_5)
P_2	110 "	" " "
P_3	160 "	" " "

The cane was planted on the black soil at San Roman in May 1959. It has now been harvested three times. The average yields of the four replicates are as follows:

YIELDS IN TONS CANE PER ACRE

Treatment	Plants Harvested Feb. 1961	1st Ratoon February 1962	2nd Ratoon February 1963
P_1	49.9	20.8	31.6
P_2	52.9	23.1	34.6
P_3	56.1	25.6	36.0
LSD ≠	4.4	1.2	2.3

In 1963 both the P_2 and P_3 treatments gave satistically better results than the P_1 treatment. It is apparent that more than 160 lb/acre triple superphosphate could be applied to produce maximum yields of ratoon cane on the black soil.

TRIAL NO. 3

TYPES OF PHOSPHATIC & NITROGENOUS FERTILIZERS

The phosphatic fertilizers compared are Dimon (18 - 46 - 0) NPK) and Triple Superphosphate (40% P_2O_5); the nitrogenous fertilizers Sulphate of Ammonia (21%N), Ammonium Sulphate Nitrate (26%N) and Dimon (18-46-0 NPK). The trial was superimposed on 6th ratoon POJ2878 at San Roman in August 1961, it was harvested at 17 months cane age in February 1963.

Treatments: 1. Dimon 18-46-0 NPK at the rate of 200 lb/acre.

2. S/A (21%N) to equal the N of treatment 1, plus TSP to equal the P of treatment 1.

3. Amm sulphate nitrate to equal the N of treatment 1, plus TSP to equal the P of treatment 1.

Results: Average Yields per Acre in Tons Cane

1	35.5
2	28.9
3	32.1
LSD≠	1.9

The overall superiority of Dimon as a source of phosphatic and nitrogenous plant nutrient is clearly demonstrated in this trial.

TRIAL NO. 4

NITROGEN PHOSPHATE & POTASH LEVELS

This trial is on black soil and was planted in 1956. It has now been harvested six times. Fertilizer treatments are as follows:

A	No fertilizer applied									
B	200	lb/acre	Sulphate	of	Ammonia	50	lb/acre	Triple	Superphosphate	
C	200	"	"	"	"	100	"	"	"	
D	200	"	"	"	"	150	"	"	"	
E	300	"	"	"	"	50	"	"	"	
F	300	"	"	"	"	100	"	"	"	

G	300	lb/acre	Sulphate	of	Ammonia	150	lb/acre	Triple	Superphosphate
H	400	"	"	"	"	50	"	"	"
I	400	"	"	"	"	100	"	"	"
J	400	"	"	"	"	150	"	"	"
K	300	"	"	"	"	100	"	"	"
L	400	"	"	"	"	150	"	"	"

In addition plots K and L received 50 lb/acre Muriate of Potash ($60\%K_2O$). Below are given the average results of the six reapings.

TONS CANE PER ACRE

	FEB.'58	MAY'59	JUNE'60	MAY'61	JULY'62	MAY'63
A	26.8	40.5	12.8	29.6	22.9	14.0
B	39.3	53.6	14.9	39.6	28.8	26.1
C	42.4	53.1	19.8	41.4	26.9	24.4
D	34.6	53.9	16.5	43.7	29.6	25.4
E	34.3	55.1	18.7	36.7	27.2	28.0
F	47.6	55.4	15.0	41.1	31.2	28.6
G	43.4	58.9	18.5	43.6	31.2	29.7
H	38.4	48.6	16.1	36.3	28.0	25.9
I	35.7	53.9	19.2	37.7	27.6	29.2
J	46.1	55.2	18.8	40.2	28.4	28.4
K	40.4	51.3	19.3	45.0	31.1	29.4
L	40.8	53.2	20.0	39.8	28.5	27.6
LSD/	N.A.	N.A.	3.9	5.4	4.2	5.8

The 1963 results illustrate the value of applying both nitrogen and phosphatic fertilizers together at the higher levels (compare the yields of treatments B and J). Potash application seems to be of doubtful value.

TRIAL NO. 5

3x3x3 NPK FERTILIZER TRIAL

Planted on red soil at San Andres in July 1960, this trial has now been harvested twice. Treatments are NO., 1, 2 = 100, 200, 300 lb/acre Sulphate of Ammonia. PO, 1, 2 = 50, 100, 150 lb/acre Triple Superphosphate, KO, 1, 2 = 0, 50, 100 lb/acre Muriate of Potash. Main treatment yields, average , are given for both reapings.

TONS CANE PER ACRE

	Reaped Feb. 62	March 63
N_0	45.2	26.1
N_1	39.8	25.7
N_2	43.3	27.3
P_0	30.4	18.3
P_1	49.2	30.0
P_2	48.6	30.4
K_0	39.9	23.6
K_1	46.8	27.8
K_2	41.5	27.6
LSD/	-	-

RESULTS

As in the plant cane crop, none of the yield differences reaches the normal level of significance, although the beneficial effects of phosphate continue to be most marked. However again the 100 lb/acre level seem sufficient to produce optimal yields of cane. Potash application has produced a slight increase in yield but the lower level, 50 lb/acre, seems adequate.

TRIAL NO. 6

The fertilizer treatments in this experiment are identical to those of the previous trial. The soil is black Louisville clay. Planted in June 1960, the trial has been harvested twice to date. Yields are as follows:-

TONS CANE PER ACRE

	Sept'61	Jan'63
N0	51.4	34.0
N1	46.4	39.5
N2	48.8	37.5
P0	45.6	29.5
P1	50.9	38.7
P2	50.1	42.8
K0	44.9	36.3
K1	53.9	40.1
K2	47.8	34.6
LSD/	-	6.6

The only statistically significant result is due to the application of phosphates. Both the P_1 and P_2 treatments have outyielded the P0 treatment, thus indicating that in the first ratoon crop phosphates are of even greater importance than they were in the plant crop. The application of nitrogenous fertilizer is also relatively more important in the ratoon crop, but the application of potassic fertilizers still appears of doubtful value.

TRIAL NO. 7

3 x 3 x 2 NPK FERTILIZER TRIAL

The fertilizer levels are as follows:

N 0, 1, 2 = 100, 250, 400 lb/acre Sulphate of Ammonia

P 0, 1 , 2= 100, 200, 300 " Triple Superphosphate

K 0, 1 = 0, 100, lb/acre Muriate of Potash

The fertilizer trial was superimposed on a cane farmer's newly planted field at Calcutta. The soil is red loam with a few stones present. It has been harvested twice to date and the main treatment yields are given below:

TONS CANE PER ACRE

	Reaped Feb.'62	March'63
N0	54.3	40.3
N1	51.4	38.6
N2	63.1	43.4
P0	49.9	38.3
P1	57.0	40.2
P2	62.0	4 3.8
K0	55.4	42.8
K1	57.2	38.7

Of the three nutrients only the beneficial effects of phosphates have been clearly indicated from the first ratoon cane. As in the plant cane crop however the yield responses due to fertilizer treatments do not differ significantly.

TRIAL NO. 8

This trial has similar fertilizer treatments as the last one, it is on black soil in the San Pablo area. The trial was planted in June 1960, harvested as plants in March '62, and as 1st ratoon in April '63. Below are recorded the main treatment yields for both crops.

	TONS CANE PER ACRE Plants (1962)	1st Ratoon (1963)
N0	49.5	23.6
N1	47.1	24.3
N2	47.6	24.2
P0	47.0	22.9
P1	45.9	22.9

	Plants (1962)	1st Ratoon (1963)
P2	51.2	26.5
K0	47.1	22.3
K1	48.9	25.8

No statistically significant yield increases have been produced by the various fertilizer treatments. The effects of nitrogen appear limited to an increase of less than 1 ton cane per acre. Phosphates have produced a substantial increase in yield (3½TC/A) at the 150 lb/acre level, and an increase of 2½ tons cane per acre have been produced by the application of 100 lb/acre Muriate of Potash.

VARIETY TRIALS

TRIAL NO. 9

This was planted on black clay soil at San Roman in 1956. It has now been harvested six times. The yields at each harvest and the mean yields from the six crops are shown below:

TONS CANE PER ACRE

Variety	April 58	May 59	May 60	March 61	Jan 62	Feb 63	Mean
POJ2878	58.0	32.0	15.9	40.7	28.6	29.9	34.2
B41227	54.3	24.5	23.1*	45.2*	35.7	39.9*	37.2
B41211	61.8	28.0	17.3	40.8	35.0	42.6*	37.6
B4098	60.4	27.0	23.4*	45.7*	36.0	41.2*	38.9
B37161	51.9	15.0	13.6	29.8	27.5	29.5	27.9
LSD/	N.A.	N.A.	3.7	3.6	-	4.9	

NA= Not available * Significantly outyielded the standard cane POJ 2878.

(N.B. Apparently there was no fertilizer applied after the 1959 crop - this could account for the low yields when harvested in 1960).

When harvested in 1963, three varieties outyielded POJ2878 by statistically significant amounts, B41211, B4098 and B41227. These same three varieties have outyielded POJ2878 on the average of the six crops, but the yield of B41211 tends to be uncertain, sometimes high (as in the plant crop) and sometimes low (3rd ratoon). The varieties B4098 and B41227 are already being recommended for commercial planting in British Honduras.

TRIAL NO. 10

This twelve variety experiment was planted in June 1960, on reddish soil at Xaibe. It was harvested as plants in February 62 and as 1st ratoon in March 63 and gave the following average yields.

YIELD OF CANE PER ACRE (TONS)

	PLANTS (1962)	1st RATOON (1963)	MEAN
B52298	105.7	63.2	84.4
B47419	103.3	50.8	77.0
B4744	94.4	55.4	74.9
B4098	93.5	52.1	72.8
B50112	93.1	47.1	70.1
B41227	86.6	60.2	73.4
B49119	85.8	47.4	66.6
POJ2878	83.7	51.0	67.3
B41211	77.3	53.5	65.4
B37161	77.0	46.7	61.8
B34104	74.7	45.5	60.1
B3337	72.1	49,1	60.6

As noted in the 1962 Annual Report, the hihg plant cane yields are due to extremely favourable growing conditions and the fact that the plant crop received over 15 cwt of fertilizer per acre. The 1st ratoon crop received 2001b/acre of an 18-46-0 NPK compound. As with the plant crop, none of the yield differences reach normal levels of significance, but the varieties of interest, B52298, B41227,B4744, B4098, B47419 continued to give good results as 1st ratoon cane. These five varieties have given the best mean yields for both crops. As in the plant crop, juice quality of the varieties does not differ significantly.

TRIAL NO. 11

The twelve varieties in this trial are the same as in the previous experiment. The cane was planted in January 1961 on the black clay soil at San Roman. It has now been harvested twice, as plants in March 1962, and as 1st ratoon in March '63. It gave the following results:

YIELDS OF CANE PER ACRE (TONS)

	Plants (1962)	1st Ratoon (1963)	Mean
B41227	28.5	46.7*	37.6
B52298	27.4	64.4*	45.9
B4098	25.7	46.2	35.9
B41211	24.6	46.6*	35.6
B47419	24.3	47.7*	36.0
B49119	23.4	39.3	31.3
B37161	23.1	32.2	27.6
B4744	22.9	47.6*	35.2
B50112	22.7	39.8	31.2

	Plants (1962)	1st Ratoon (1963)	Mean
POJ2878	21.1	36.0	28.5
B34104	14.2	30.0	22.1
B3337	13.9	23.6	18.7
LSD/	-	10.5	

* Significantly outyielded the standard cane POJ2878.

Five varieties, i.e. B52298, B47419, B4744, B41227 and B41211 have all statistically outyielded the commercial cane POJ2878.

TRIAL NO. 12

This trial was planted in August 1961 and reaped for the first time in February 1963. It is on red soil at Maibe, and contains all the 12 varieties used in trials Nos. 10 & 11 plus 7 new ones imported from Barbados in 1960. These are thus 19 varieties in the trial and it is replicated three times. Average yields for each variety are given below:

YIELDS OF CANE PER ACRE (TONS)

B54277	58.6*(N)	B4744	43.4
B41227	52.2*	B45152	41.7 (N)
B41211	50.8*	B5480	40.2 (N)
B52298	49.9	B50112	39.4
B4362	49.1(N)	B45151	38.8 (N)
B49119	48.9	B4501	38.1 (N)
B47419	46.2	POJ2878	36.3
B3337	45.6	B34104	35.6
B4098	43.6	B42231	21.6 (N)
B37161	43.5	LSD/	15.8

* Significantly outyielded the standard cane POJ2878.

(N) Varieties harvested for the first time in British Honduras.

Only two of the new varieties have given yields which are noteworthy, these are B54277 and B4362. B54277 together with B41227 and B41211 are the only three varieties which have satistically outyielded the standard cane POJ2878. No significant difference in juice quality were found when the cane was harvested.

PLANT POPULATION TRIALS

TRIAL NO. 13

Treatments in this trial include variations in row spacing, and planting distances within the row.

Treatments A Cane Rows 4 ft apart

B " " 5 ft apart

C " " 6 ft apart

1 Continuous planting, seed pieces planted end to end.

2 Double setts planted 2 ft apart within the row

3 " " " 3 ft " " " "

The cane was planted at San Roman in January 1961, it was harvested as plants in March 62, and as 1st ratoon in March 63. Main treatment yields are given below:

YIELD OF CANE PER ACRE (TONS)

	Plant('62)	1st Ratoon ('63)	Mean
A	25.5	55.2	40.3
B	21.6	47.7	34.6
C	20.7	44.3	32.5
1	23.5	49.5	36.5
2	22.6	50.7	36.6
3	21.6	47.1	34.3
LSD/	3.6	1.6 (A,B, C only)	

The overall superiority in yield of cane from treatment A, rows planted 4 ft. apart, continues to be significant, and also the yeild from the 5 ft rows is also significantly better than that from the 6 ft rows. There are no statistically significant yield differences from within-the-row planting treatments but on the average for the two reapings there is an increase of over 2 tons cane per acre in favour of either the continuous planting or 2 ft spacings as compared to the 3 ft within-the-row spacing treatment.

TRIAL NO. 14

This trial is identical in treatments to the previous one (No. 13) but it was planted later, in June 1961,on red soil at Xaibe. It has only been harvested once, as plant cane in February '63. The main treatment yields are shown below:

TONS CANE PER ACRE

A	45.1
B	46.1
C	43.7
1	48.5
2	46.1
3	40.4

Although there are no statistically significant differences in the treatment yields, there is a noticeable increase in yield of cane per acre from the more densly planted setts. It appears that rows 6 ft apart and cane setts 3 ft apart within the row is not conduicive to maximum yield of cane per acre.

MISCELLANEOUS TRIALS

TRIAL NO. 15

An experiment which investigated the necessity of applying to cane growing in this area, the seven most important trace elements were superimposed on ratoon cane at San Roman in August 1961. Elements used were, zinc manganese, iron, copper, molybdenum, boron and magnesium. When the trial was reaped in February 1963, there were no statistically significant differences in treatment yields, nor were there any clear indications of the deficiency of any one of the trace elements. Yields ranged from 35 to 40 tons cane/acre but these are not recorded here as they show little importance.

CONCLUSIONS FROM TRIALS REAPED IN 1963

A. FERTILIZER TRIALS

The response to nitrogenous fertilizers has been very limited and it appears that in most cases 200 lbs Sulphate of Ammonia is sufficient to produce maximum yields of cane on either the red or the black soil.

Dimon 18-46-0 NPK the mixed fertilizer used by members of the Cane Farmers' Association continues to give good results and from trial No. 3 in this report it is seen that when compared directly with Sulphate of Ammonia (21%N) or Ammonium Sulphate Nitrate (26%N) as a source of nitrogen, or Triple Superphosphate (40%P_2O) as a source of phosphate, it has proved statistically superior to these. Dimon therefore continues to be recommended to the cane farmers for general use throughout the whole cane growing area.

Once again the results obtained from the numerous fertilizer trials have clearly indicated the great importance of phosphates. It is evident that at least 150 lb/acre Triple Superphosphate (or its equivalent in phosphate) is required to produce optimum cane yields on either red or black soil, plants or ratoons.

The value of applying potassic fertilizer has not been clearly indicated and it is doubtful if more than 100 lb/acre of Muriate of Potash (or its equivalent) is necessary to produce adequate yields of cane under the conditions found in the Corozal area.

B. VARIETY TRIALS

The two varieties selected for commercial production B41227 and B4098 have continued to outyielded the standard cane POJ2878 in the variety trials harvested in 1963. In each of the four trials B41227 has outyielded POJ2878, three times by statistically significant amounts. Similarly B4098 has outyielded POJ2878 in every trial, and twice by statistically significant amounts. B52298 harvested three times, has twice significantly outyielded POJ2878 and the yield increase in the third trial almost reached the significance level. B4744 has outyielded the standard cane in each of three reapings, twice significantly. Similarly B47419 has outyielded POJ2878 in each of three reapings, once by a significant margin. A new variety B54277, only reaped in one plant cane trial to date, has significantly outyielded the standard cane POJ2878 and also B4744 and B4098, although the two latter varieties themselves out-yielded POJ2878 by approx. 7 tons cane per acre. Another new variety, B4362, has yielded very well and gave excellent juice quality.

C. PLANT POPULATION TRIALS

In trial harvested as ratoons (trial 13) the closer planted rows continued to produce better yields than the rows planted more widely apart. Thus the yield from the 3 ft rows was 7½ tons/acre more than that from the 5 ft rows which was itself 3½ tons/acre more than that from the 6 ft rows. Although closer planting within the rows has given increased cane yields this difference was not significant.

The second spacing trial harvested as plant cane on the red soil has also indicated the increased yields to be obtained from closer planting of cane setts.

VISITORS

H.E. The Governor, Sir Peter Stallard K.C.M.G., C.V.O., M.B.E.

Honourable George C. Price, Premier

Honourable A.A. Hunter, Minister of Natural Resources

Honourable David McKoy, Minister of Labour

Mr. Magnus Halcrow, Chief Executive Officer, Reconstruction & Development Corp.

Mr. Lloyd Williams of Imperial Chemical Industries

Mr. Gerrard of the Department of Technical Cooperation

Mr. Victor Elliot, Chief Chemist of the Jamaica Cane Farmers Association

Mr. Arturo Godoy, D.V.M. of the American Cyamid Company

Mr. John Hume, Representative of "Ampac Ltd"

Members of the Caribbean Citrus Research Scheme, U.W.I., Trinidad

Students of the University of Puerto Rico

(E.W.KING)
CHIEF AGRICULTURAL OFFICER

APPENDIX I

LIVESTOCK

List of main treatments carried out by the Acting Veterinary Officer, Farm Demonstrators and Livestock Assistants in 1963.

Diseases or treatments	Horses	Cattle	Pigs	Sheep	Poultry	Dogs
Worming	190	417	540	151	677	61
Castration	42	125	615	16	-	33
Lampas	5	-	-	-	-	-
Mange	20	5	-	-	-	10
Wounds & screw worm infection	84	172	41	10	-	81
Colic	21	-	5	-	-	-
Retention of Urine	4	3	-	-	-	-
Scouring	4	62	2	-	-	-
Mastitis	-	17	-	-	-	-
Infectious Warts	5	55	-	-	-	-
Coccidiosis	-	-	-	-	1,454	-
Fowl Pox	-	-	-	-	342	-
Pneumonia all causes	19	12	6	1	13	12
Influenza	26	12	-	-	-	-
Coryza	-	-	-	-	342	-
Fowl Typhoid	-	-	-	-	150	-
Removal of Placenta	2	30	-	-	-	-
Spraying	9	305	-	-	-	-
Distemper	-	-	-	-	-	20
Preventive Vaccination						
New Castle	-	-	-	-	136	-
Hog Cholera	-	-	-	6,618	-	-

APPENDIX II

1963

SLAUGHTER HOUSE RETURNS FOR THE COUNTRY

Months	CATTLE			PIGS			SHEEP		
	Number	Total Dressed Wt/lbs.	Av. Dressed Wt./Animal	Number	Total Dressed Wt./lbs.	Av. Dressed Wt./Animal	Number	Total Dressed Wt.	Av. Dress Wt./Anim
January	299	81,945	270	475	29,710	63	6	151	25
February	308	83,989	272	530	31,955	60	4	67	17
March	320	90,451	283	373	26,191	70	17	442	26
April	269	77,828	285	235	13,915	54	12	284	23
May	241	72,547	301	333	21,360	64	5	158	31
June	237	67,884	286	308	18,366	60	6	189	31
July	297	81,123	273	306	18,227	60	22	626	28
August	319	78,007	244	299	16,541	75	24	772	32
September	244	67,304	275	231	14,719	64	10	313	31
October	296	57,058	194	244	16,096	55	10	336	34
November	308	90,983	295	457	29,011	64	11	294	27
December	316	83,353	264	480	1,940	67	15	448	30
TOTALS	3,444	932,472	270	4,321	258,031	63 lbs	142	4,060	28 lbs.

APPENDIX III

METEOROLOGICAL DATA - 1963

	TEMPERATURE MEAN MONTHLY MAXIMUM				TEMPERATURE MEAN MONTHLY MINIMUM				RELATIVE HUMIDITY % MEAN MONTHLY				BAROMETRIC PRESSURE			
	Stanley Field Airport	Stann Creek Agstat	Toledo Agstat	Central Farm	Stanley Field Airport	Stann Creek Agstat	Toledo Agstat	Central Farm	Stanley Field Airport	Stann Creek Agstat	Toledo Agstat	Central Farm	Stanley Field Airport	Stann Creek Agstat	Toledo Agstat	Central Farm
January	79	79	78	83	61	61	63	63	79	85	93	92	30.00"	29.03	NA	85
February	82	82	78	84	61	61	63	63	75	81	79	92	29.98	30.12	NA	92
March	87	87	80	83	62	62	67	63	74	85	94	NA	30.45	30.08	29.01	NA
April	85	85	83	88	62	77	66	69	70	84	95	90	29.91	30.06	29.15	90
May	85	85	83	81	65	68	68	64	69	86	80	91	29.94	30.07	29.66	91
June	84	84	84	88	71	73	72	65	72	87	89	NA	29.86	30.07	29.54	NA
July	86	86	82	86	63	71	72	66	77	88	90	94	29.92	30.05	29.48	94
August	87	87	83	84	69	72	71	66	85	87	80	NA	29.91	30.06	29.72	NA
September	87	87	83	83	62	73	72	65	76	90	83	NA	29.83	30.35	29.47	NA
October	86	86	82	83	65	69	70	66	79	91	83	84	29.93	30.06	29.38	84
November	84	84	81	82	60	69	67	63	72	90	88	90	29.84	29.10	29.57	90
December	81	81	77	84	56	68	63	61	73	89	91	NA	30.03	30.15	29.63	NA

NA - Not available

APPENDIX IV

SUMMARY OF RAINFALL 1963

DISTRICT & STATIONS	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL 1963	TOTAL 1962	10 YEAR AVERAGE
COROZAL DISTRICT															
Corozal Town	.70	2.20	.44	1.66	1.90	1.08	15.06	4.39	10.69	6.76	1.87	.33	47.16	47.59	47.97
Corozal Agstat	0.35	2.08	.23	1.16	1.24	.68	9.44	2.58	7.05	4.74	.98	.15	30.68	NA	NA
Louisville	0.34	1.66	.01	.20	1.43	3.37	12.27	4.50	9.27	4.02	2.11	.27	39.95	44.96	50.90
Pembrokehall	0.79	2.68	.15	.27	.18	4.15	8.80	2.17	8.25	3.20	1.89	Nil	32.53	40.07	NA
Cane Station (San Roman)	0.62	1.93	0.09	0.36	.69	3.76	11.01	2.53	7.74	3.73	1.74	.27	34.47	NS	NS
ORANGE WALK DISTRICT															
Orange Walk Agstat	0.77	2.56	.63	.43	2.13	5.03	10.37	5.34	10.55	9.14	1.57	1.32	50.13	41.07	NS
Gallon Jug	0.46	2.32	1.80	.14	2.66	1.09	10.21	6.40	9.74	5.83	2.72	.24	43.61	53.11	60.11
BELIZE DISTRICT															
Stanley Field Airport	1.07	3.73	1.55	.36	1.50	1.25	9.73	7.01	8.43	12.35	3.10	1.61	52.02	61.81	67.65
Belize City	0.58	4.46	1.61	.43	.13	1.25	5.93	5.05	7.42	11.11	3.61	1.02	42.60	NA	NA
Gracie Rock	2.34	3.63	0.63	1.93	5.00	4.29	11.95	5.54	13.45	8.51	2.46	1.16	60.79	NA	NA
Maskall	2.39	.93	9.20	1.97	1.31	5.28	10.35	4.96	9.69	10.74	3.08	Nil	59.90	80.99	67.98
CAYO DISTRICT															
Central Farm	3.37	2.54	4.66	.65	.75	5.36	13.21	19.25	8.54	4.11	1.30	1.01	74.50	85.35	91.90
Augustine Pine Ridge	1.22	2.72	5.38	.67	1.77	3.69	5.03	7.20	5.23	12.20	1.51	1.12	47.27	63.67	64.54
Cooma Cairn	2.17	5.73	2.82	.87	2.20	1.80	17.42	10.64	17.36	13.92	7.85	1.46	84.24	77.00	NS
Norland	2.10	2.64	3.95	.55	1.02	2.51	9.64	7.42	8.57	7.47	2.53	1.07	50.00	58.73	62.67
Mai Camp	1.56	4.49	5.06	.65	.57	2.29	6.93	5.96	6.34	10.46	4.77	1.71	50.79	58.89	NS
San Diego	1.41	3.25	3.54	.94	1.30	2.02	10.39	5.99	8.86	9.10	2.83	1.22	50.25	NS	NS
Sibun Camp	5.61	5.10	3.55	1.33	6.29	5.34	24.29	5.58	19.95	6.49	7.20	1.31	92.03	NA	NS
Caves Branch	5.46	5.62	2.04	1.44	4.92	5.17	23.07	4.54	17.61	11.29	6.30	1.85	89.38	NA	NS
Roaring River	4.64	3.82	3.30	1.19	3.58	6.42	19.98	3.53	14.77	9.62	7.31	1.64	80.00	NA	NA
Never Delay	2.14	2.07	2.62	.42	4.32	3.45	14.68	5.46	13.02	9.14	2.00	1.20	61.42	NA	NS
STANN CREEK DISTRICT															
Stann Creek Agstat	3.33	6.24	2.09	1.71	6.40	2.86	10.31	6.70	10.62	13.29	3.35	.80	67.70	87.65	86.22
Pomona	4.23	3.69	3.99	2.22	6.28	4.03	13.04	5.83	13.26	8.60	2.71	.32	80.63	91.98	
Middlesex	.70	3.51	5.96	1.20	7.77	7.49	26.16	8.82	13.36	7.03	1.12	.42	81.08	100.10	104.08
Melinda Forest Station	2.31	5.99	1.31	1.82	6.41	3.42	9.73	8.64	10.92	12.54	3.77	3.01	69.51	NS	NS
Savannah Forest Station	2.66	1.03	8.08	.86	6.45	3.78	10.12	10.33	16.63	6.65	3.96	1.76	77.29	105.17	98.41
Sittee River	5.02	3.27	6.74	.48	4.56	2.21	5.68	6.72	19.28	10.57	4.90	0.55	69.88	74.42	NA
Alta Vista	5.17	4.28	1.32	1.88	8.31	3.63	17.41	6.59	14.84	11.33	4.56	0.62	79.94	NA	NA
TOLEDO DISTRICT															
Punta Gorda Town	7.67	5.08	16.52	1.93	9.40	4.52	32.23	26.81	23.83	13.85	7.00	6.16	150.00	202.93	161.91
Agstat Toledo	1.74	4.12	9.79	1.87	7.57	6.00	31.40	18.92	19.56	12.29	4.32	.95	118.73	141.57	148.63
Machaca Forest Station	7.40	2.72	6.99	2.24	7.38	11.98	24.61	13.21	16.10	12.19	4.07	1.02	109.90	131.83	NS
Columbia Forest Station	5.15	3.91	5.09	1.59	3.07	5.65	25.43	12.54	17.92	22.20	1.12	1.06	109.20	110.52	NS
Monkey River Town	5.07	2.63	8.73	.22	4.33	3.22	10.96	7.30	14.14	9.24	5.05	2.44	74.23	105.73	NS
Crique Sarco	6.01	5.53	10.82	4.31	5.15	16.53	27.09	14.73	15.44	14.28	2.82	1.09	123.80	170.49	NA

NA - NOT AVAILABLE
NS - NEW STATION

APPENDIX V

LIST OF AGRICULTURAL EXPORTS

1963

ARTICLES	QUANTITIES/NUMBER	VALUE $
Bovine Cattle	4	450
Swine (live)	661	11,096
Poultry "	3,058	5,330
Miscellaneous live animals	80	525
Meat preparations	200 lbs.	138
Eggs	81,174 doz.	42,275
Fish & Fish preparations	167,892 lbs.	39,970
Lobsters (whole)	47,129 "	18,267
Conch	86,310 "	21,038
Fish(dried, smoked or salted)	71,123	13,351
Fruits and Vegetables		
Oranges (fresh)	2,111,100 lbs.	134,258
Tangerines	4,200 "	183
Grapefruit	2,429,400 "	231,045
Plantains and Bananas	57,392 boxes	51,595
Coconuts (whole)	172,200 nuts	12,055
Brazil or Cashew nuts	285	164
Papayas	463 doz.	1,366
Other Fresh Fruit	52,196 lbs.	3,136
Grapefruit Segments	5,299,700 lbs.	1,078,397
Grapefruit Concentrate	68,000 lbs.	17,443
Orange "	54,107 "	889,505
Grapefruit Juice	1,458,600 "	146,487
Orange Juice	2,588,500 "	299,917
Tomatoes(Fresh)	2,575 "	255
Cabbage	200 "	30
Molasses	442,610 gals.	104,102
Unrefined sugar	57,011,000 lbs.	5,124,925
Natural honey	210,830	42,120
Coffee, tea, cacao bean etc.	126,857	25,439
Tobacco and tobacco products	450 lbs.	100
Cohune kernels	2,500	23
Tortoise shell	843 lbs.	2,166
Sweet Orange Oil	35,989 lbs.	14,213